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# WISEBED

Wireless Sensor Network Testbed

The situation so far

- When talking about Future Internet, WSNs are often among "hot" topics

- Sensor networks are usually considered to be the extension of the Internet into the real world and are supposed to make up an important part of the Future Internet's architecture

- So far, the number and size of actual testbeds for sensor networks have been rather limited
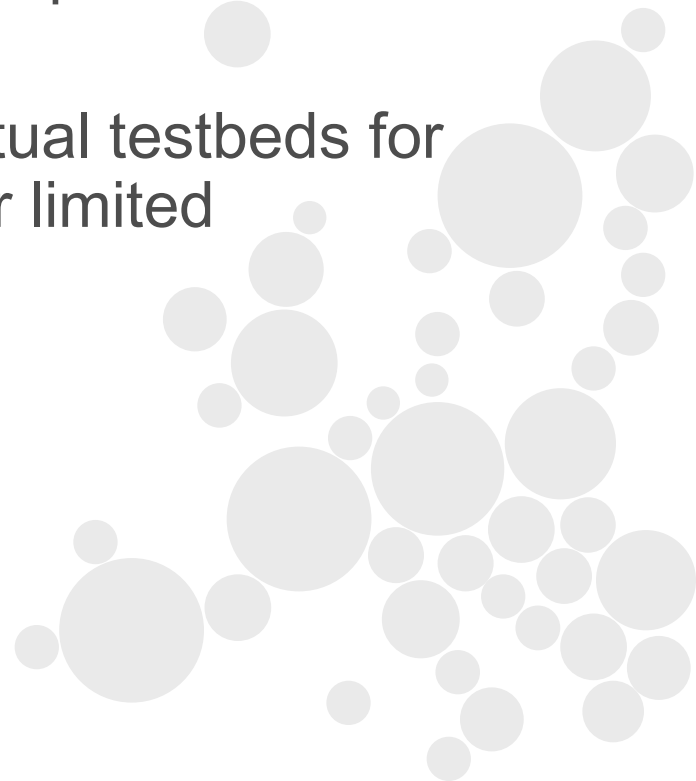
Project Goals

- Provide a multi-level infrastructure of interconnected testbeds of large-scale wireless sensor networks for research purposes

- Form well-organized, large-scale (a few thousand devices) structures rather than just some large network

- Improve scale and quality of practical and theoretical collaboration

- Offer the new facilities to all kinds of users (research, industry)
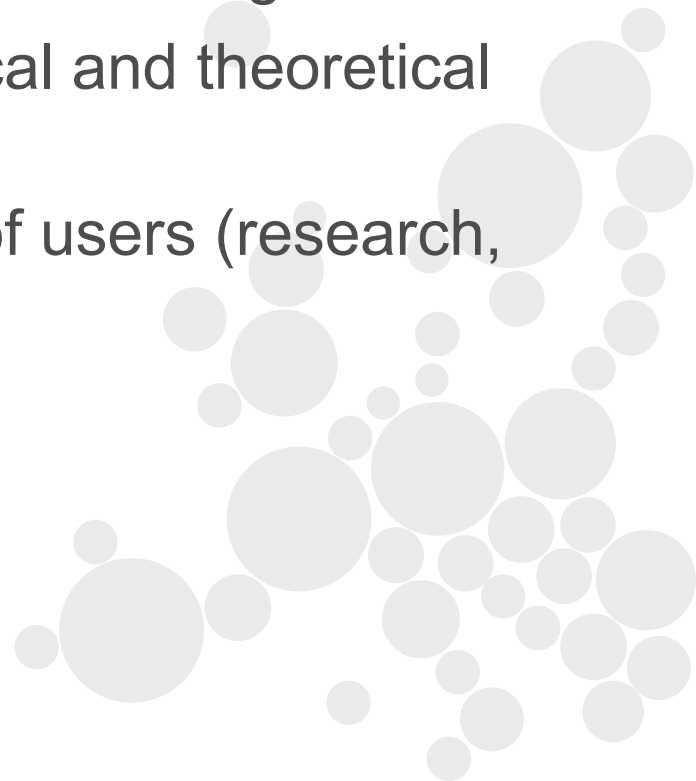
Consortium

Partner	Country	Contact
University of Lübeck (Coord.)	D	Prof. Dr. Stefan Fischer
FU Berlin	D	Prof. Dr. Jochen Schiller
TU Braunschweig	D	Prof. Dr. Sandor Fekete
RACTI	GR	Prof. Dr. Ioannis Chatzigiannakis
University of Berne	CH	Prof. Dr. Torsten Braun
University of Geneva	CH	Prof. Dr. Jose Rolim
UPC Barcelona	E	Prof. Dr. Josep Diaz
TU Delft	NL	Prof. Dr. Koen Langendoen
University of Lancaster	GB	Prof. Dr. Geoff Coulson

Project Facts

- **Type of project:** Small and Medium-scale focused research action

- **Start Date:** 1 June 2008

- **Duration:** 36 months

- **9 Partners**

Basic Work Packages

| WP 1: Hardware	WP 2: Software	WP 3: Algorithms	WP 4: Data
create the hardware infrastructure	Middleware, workflow man. and access control	Creation of a library of sensor network algorithms	Application scenarios and simulation traces

Hardware

- Deploy large numbers (thousands) of wireless sensor devices of different hardware technologies in different types of terrains and topologies (indoors, outdoors, smart buildings, disaster recovery, etc.)

- Use european hardware platforms

- Use testbed for evaluating and testing solutions at large scale

- Selection of setup of hardware is not trivial due to the nature of a testbed
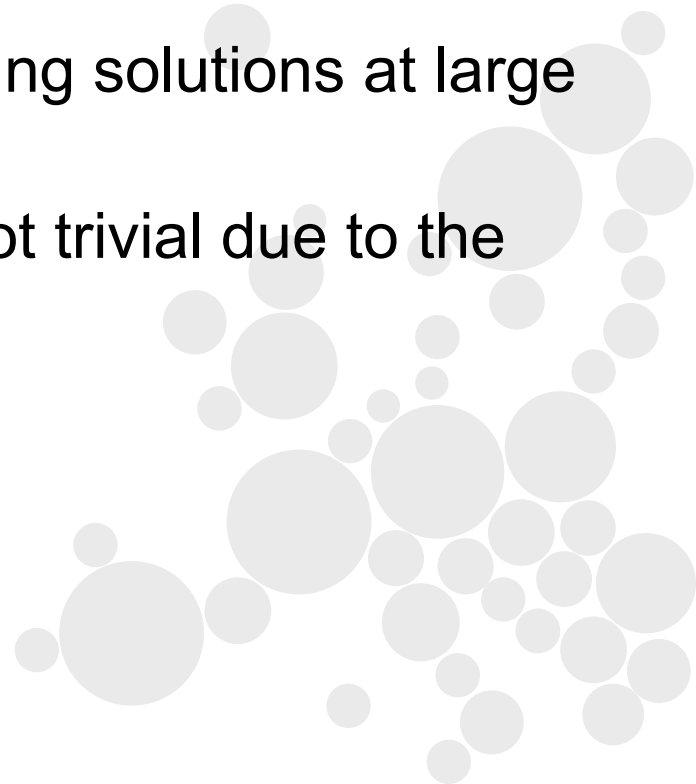
Software

- Provide a means for researchers to deploy and test their own software

- Integrate several existing middleware approaches

- Provide a virtual unified testbed

Algorithms - WISELIB

- Provide a repository of algorithms, mechanisms and protocols that can be directly used in future experiments as reference for benchmarking purposes.

- Develop a library (WISELIB) that can be directly used in future systems or integrated in order to deal with the vital challenges of the wireless sensor networks

Data Traces

- Collect traces of data from the physical environment and derive models of real-life situations and scenarios

- These scenarios will be used to evaluate the performance of algorithms and systems and draw conclusions on their operation

- Large-scale WSN data traces do not yet exist even for communication

Potential Users - Benefits

- Enable researchers or companies to bypass most of the time-consuming issues of deploying and maintaining a WSN testbed

- Both theoreticians and practitioners will get together and use the project's facilities

- A deeper understanding of the gap that exists between theory and practice in WSN

Thank you.